



SCEO Helps Make “Enlightening” Improvements

The new Schools Initiative Lighting Grant Program introduced by the Budget and Control Board's S.C. Energy Office in April has been a great success. So far, 4 of the eligible 28 school districts have been awarded grants totaling \$236,646, with estimated total annual energy savings of \$24,600.

With lighting retrofits being the easiest and least expensive first step to energy efficiency, the S.C. Energy Office encourages schools to give priority consideration to lighting upgrades for their facilities.

Participating schools and districts thus far are: Ware Shoals High School, Greenwood School District 51; Frances Mack Elementary School and Swansea Elementary School, Lexington School District 4; Mullins High School, Marion School District 2; Rains Centenary Elementary School and Pleasant Grove Elementary School, Marion School District 3.

The Schools Initiative is making available grants of up to \$75,000 to the state's 28 most financially-challenged districts - those that rank lowest in “wealth per pupil” or in “required local support” as defined by the State Department of Education. Priority is given (during the first grant cycle) to the school districts with the greatest financial need.

Remaining eligible school districts (in alphabetical order) include: Allendale; Bamberg 1 and 2; Barnwell 19, 29, and 45; Clarendon 2 and 3; Dillon 1,2, and 3; Dorchester 2; Florence 2,3, and 4; Hampton 1 and 2; Lee; Marion 1 and 4; Marlboro; Orangeburg 3; Sumter 2; and Williamsburg.

These grants provide funding for projects that install energy efficient lighting and upgrades in existing school buildings in accordance with the *S.C. School Initiative Planning and Construction Guide*. Districts are required to contribute a minimum cost share of 25 percent of the project

cost. If the district is unable to provide the cost share, financing is available from the South Carolina Energy Office's ConserFund Loan Program. The total funding of \$3 million will be awarded in three annual cycles of \$1 million. For more information, contact Tom Hudkins of the S.C. Energy Office at (803) 737-8030.

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E2 Makes His TV Debut

The South Carolina Energy Office and the South Carolina Department of Health and Environmental Control held a news conference in April to discuss Earth Day 2000 initiatives by the two agencies. But the highlight of the event was the introduction of E2, the Energy Office's new mascot, and the debut of his Public Service Announcement.

E2 has three messages: saving energy always saves money; saving energy keeps our air and water clean; and saving energy makes our nation less vulnerable to foreign events such as wars and trade embargoes. E2 was created to enhance and interact with DHEC's “Recycle Guys.”

E2 will hit the airwaves again in July with the debut of another PSA, this time on the importance of energy conservation in the home. A press conference will be held in conjunction with the NEED (National Energy Education Development) Project's Teacher's Forum to be held in Charleston this July.



E2 and DHEC's Motor Oil Guy join students from North Springs Elementary School, who recently were selected as Champions of the Environment for a third year.



Notes From the Director

Mitch Perkins

When an old appliance dies, how do you find a replacement that does the job but uses less energy? The ENERGY STAR Purchasing Tool Kit, compiled by the U.S. Environmental Protection Agency (EPA), may be just what you need. The Tool Kit is a guide to buying energy efficient products. Based on purchasing guidelines for federal agencies, the guide lists energy efficient models of appliances, equipment and other energy using products.

For residential energy users the guide lists a full range of information on refrigerators, dishwashers, room air conditioners, central air conditioners, furnaces, dishwashers, energy efficient windows and doors, roofing products and many lighting products.

There is also information for businesses. The guide lists energy efficient products for rooftop ventilation systems, electric motors and transformers, office equipment such as computers and monitors, copiers, FAX machines and fluorescent lamps and ballasts.

Businesses will also appreciate the inclusion of examples of model language that can be used when going out for bid for projects that include energy efficient products. It can serve as a procurement guide for businesses, local units of government, housing authorities, schools or anyone else considering an energy efficient program. With this abundance of information, no one has an excuse for not being more energy efficient.

Copies of the ENERGY STAR Purchasing Tool Kit are available from the S.C. Energy Office or by calling the Environmental Protection Agency 1-888-782-7937.

S.C. Energy Office Producing Landscaping Guide

The S.C. Energy Office is working with Clemson University's Horticulture Department to develop a how-to guide for energy-efficient landscaping. The publication, free for the asking, will be an easy to follow guide for owners of both site-built and manufactured homes who are eager to begin landscaping projects but are unsure of how to begin.

The manual will focus on the ways that a landscape design can actually reduce energy costs in the home through proper solar and wind orientation; but will also explain how techniques like xeriscaping and the selection of hardy and native plants can reduce the need for excessive watering and pesticides. Full-color drawings and photographs will accompany explanations.

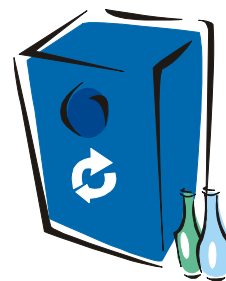
A properly designed landscape can have a significant impact on a home's energy efficiency, in addition to making it more beautiful. The S.C. Energy Office is eagerly awaiting the October publication of this manual, as it will be an important resource for residential energy consumers in the state.

For more information, contact Tricia Tangney of the S.C. Energy Office.

What's Happening Around the State



In an effort to expand glass recycling within the state, the S.C. Energy Office has contracted with DHEC's Office of Solid Waste Reduction and Recycling to subsidize three regional glass recycling centers. Counties chosen to serve as regional hosts are Lexington, Darlington and Hampton. All three sites have been completed and are now open for business. Each site is suitable for storing color-separated container glass for recycling. Lexington County, the first site to open, reported 11 tons of glass collected the first month!



We consider this project to be a huge success. Not only is glass being diverted from the landfills, it is being reused to make new products. In addition, by setting up regional sites, many counties can be served that would otherwise not be able to fund their own recycling sites.

DHEC also plans to place a regional glass collection site in Georgetown County. Georgetown and the adjacent counties remain the only region in the state without an effective means of collecting the glass.



Glass collection site in Darlington County.

ASCEM Update

The Association of South Carolina Energy Managers (ASCEM) held its spring meeting at USC-Spartanburg in April. Participants toured Anderson Mill Elementary School to learn about the school's geothermal heat pump system that uses the earth as a heat sink, reducing heating and cooling costs. Presentations included "Navigating to Energy Sites on the Internet" and "Chiller PM in Relation to Energy Efficiency and Cost" presented by representatives of the Carrier Corporation.

In conjunction with the South Carolina Association of Physical Plant Administrators (SCAPPA), ASCEM board members have begun planning the 2000 South Carolina Facilities Managers Conference scheduled for November 11-14, at the Ocean Dunes-Sand Dunes Resort in Myrtle Beach. The conference will feature three days of workshops and seminars, a vendor fair, and a banquet dinner. Conference information and a membership application can be found at <http://www.state.sc.us/energy/ascem.htm>. Any organization interested in participating as a vendor should contact the South Carolina Energy Office. Attendees must be members of either ASCEM or SCAPPA.

Berkeley County Re-Energizes Historic Building

When Berkeley County Supervisor Jim Rozier began looking at renovating the old Berkeley County Hospital, it had rotting window frames and a hodgepodge of noisy heating and air conditioning systems. It did not meet electrical codes among others, nor indoor air quality standards.

Rozier's staff sought professional assistance and employed Davis and Floyd, Inc., design professionals, to lay out the plans to make the 1930s building into a first-rate modern, energy efficient facility without losing the esthetics and charm of the historic building. They also consulted with the South Carolina Energy Office, administrator of the Rebuild South Carolina partnership.

The building's occupants (employees of the Berkeley County Health Department) were moved to other locations for several months while the construction was under way. The old rotten, leaky windows were replaced with energy efficient double-paned thermal windows. A new 4-pipe HVAC system using an 80-ton chiller and propane boiler was also installed.

To meet air quality code requirements, a separate ventilation system was recommended and installed, that pre-conditions the make-up air introduced into the building. Since the old building had window air conditioning units that did not use ducting, new ducting systems were installed for the HVAC system and for fresh air distribution.



County Supervisor Jim Rozier stands in front of the historic Berkeley County Hospital, now occupied by the Berkeley County Health Department.

Earlier this year, the occupants came back to a building that is quiet, comfortable, healthy and energy efficient.

Mr. Rozier stated, "We are very pleased that we were able to preserve and protect the beauty of this historic building while at the same time bring it functionally into the twenty-first century." Commenting on the energy efficiency aspect of the project, he said "While we likely won't see its energy cost go down because of having to meet requirements on indoor air quality and other codes, by upgrading the lighting, windows and HVAC system to the most energy efficient equipment available today, we have certainly reduced the cost from what it would have been otherwise, and our folks who work in and use this building can now feel safe and comfortable."

Did You Know...

the Governor's Task Force on Litter offers trash receptacles for your events - free of charge? Make your events litter-free!

Boxes will be distributed in Columbia on June 21 and July 6 at 10:00 am. Call Tina Fant of the Governor's Task Force on Litter at 1-877-725-7733 to make arrangements.

The Atlantic Compact and What It Means to South Carolina

On June 7, Governor Hodges signed S1129, landmark nuclear waste legislation which mandates that South Carolina petition to join the Northeast Radioactive Waste Compact with Connecticut and New Jersey, thus forming the new Atlantic Compact.

By joining a compact, access to the Barnwell Low-Level Radioactive Waste Facility will be legally restricted to only South Carolina, Connecticut and New Jersey. The legislation also provides a “ramp-down” schedule of waste than can be accepted from out of the compact, with the caveat that by 2008 only in-compact waste will be accepted for disposal at Barnwell.

Why is this important to South Carolina? In early 1999, the South Carolina Department of Health and Environmental Control completed a study showing that the amount of space remaining for low-level radioactive waste disposal at the state-owned site in Barnwell County was much less than had previously been thought. The Barnwell site is the only such facility in the U.S. that is required to accept waste from anywhere in the nation. This is because South Carolina does not belong to an interstate low-level radioactive waste compact that has been authorized by Congress to limit waste.

Meanwhile, over 100 nuclear power plants across the U.S. continue planning for decommissioning of these facilities over the coming decades. Dismantling each nuclear plant will require a large amount of disposal capacity. According to DHEC, the Barnwell site will be filled with reactor debris from outside South Carolina long before we will need

the space for decommissioning the state’s seven nuclear reactors.

Congress has provided one clear means by which a state may exercise control over access to its nuclear waste disposal facility. A bipartisan South Carolina-backed federal law enacted in 1980 provides that interstate nuclear waste compacts approved by Congress may limit access to their disposal sites to customers located within their respective regions.

What are the benefits to joining the Atlantic Compact? Joining the Atlantic Compact is a win-win situation for South Carolina. First, Connecticut and New Jersey have agreed to provide a one-time payment of \$12 million to Barnwell, Allendale, Bamberg, and Aiken counties for economic development projects. In addition, Barnwell county would receive the first \$2 million earned after the site operator has received its 29 percent profit and the state has been reimbursed for administrative costs.

Secondly, by joining the Atlantic Compact South Carolina will reduce the amount of nuclear waste ultimately accepted for burial within the state. Connecticut and New Jersey have agreed to limit their total amount of waste sent to Barnwell to 800,000 cubic feet over the next 50 years. With seven nuclear reactors, South Carolina would need a similar amount of disposal capacity over the long run. DHEC projects that the Barnwell site has approximately 3 million cubic feet of disposal capacity remaining. Estimates for total disposal of nuclear waste at Barnwell are between one million and two million cubic feet over the next fifty years. Even by accepting a set amount of compact waste for the first

eight years, this represents a one-third to two-thirds reduction in both the amounts of waste going to Barnwell and the amount of radioactivity as measured in curies.

Perhaps most importantly, the legislation gives South Carolina control over the Barnwell facility. Under the compact arrangement, the site operator will recoup its allowable costs (which are determined by the Public Service Commission), plus a 29 percent profit. Anything beyond 29 percent is remitted to Barnwell county and then state education funds. The Budget and Control Board will determine what rates will be charged to waste generators, which means the state is in a position to maximize profits from the facility while maintaining control over the amount and types of waste that are disposed there.

If you have any questions regarding this legislation, please contact Patricia Tangney at ptangney@drd.state.sc.us or 1-800-851-8899.

FASER Offered at Discounted Rate

The S.C. Energy Office has available the Windows version of FASER (FASER2000) for your organization to purchase at a discounted price. We are offering the software at a reduced price of \$875.00 for a Single User Version or \$1,800 for a Network Version. Network Versions are licensed for use on one file server so multiple users can access the same dataset. For more information contact Julia Parris at jparris@drd.state.sc.us or call the S.C. Energy Office.

Energy Consumption in S.C. Schools and Agencies, FY 1999

Public schools, state colleges and universities, and state agencies spent \$146.7 million last year on energy for their buildings, according to *Energy Use in South Carolina's Public Facilities, Fiscal Year 1999*, recently published by the South Carolina Energy Office. This represents an increase of 0.9 percent over FY1998.

South Carolina's 86 school districts averaged \$0.82 per square foot (down 1.2% from 1998), as compared to national and regional medians of \$0.88. This continues to be a positive trend for South Carolina's public schools.

Twelve four-year colleges and universities (colleges with housing) averaged \$1.22 (down 2.4% from FY 1998). The national median for four-year colleges during 1999 was \$0.91 per square foot.

Twenty-one public colleges without housing, a group composed of technical colleges and two-year campuses of the University of South Carolina, averaged \$1.11 (down 0.9% from 1998). This compares to the national median for two-year colleges of \$0.99 per square foot.

South Carolina's state agencies vary enormously in types of energy requirements, building types, non-building energy use, size and other factors relating to energy use. Altogether, agencies spent \$30.3 million (down 3.2% from 1998) in identifiable energy costs. Because a number of agencies have utility costs included in their lease payments to private-sector landlords, the actual energy costs for state government are somewhat larger, but not quantifiable.

Three state agencies are responsible for 53.4 percent of total state building space, and pay 57.2 percent of state agency energy bills. The largest of these three state agencies, the Department of Corrections, had energy expenditures of \$8 million for 6 million square feet. The Office of General Services, Facilities Management spent \$4.1 million for 3 million square feet, and the Department of Mental Health spent \$2.9 million for 2 million square feet.

Energy Use in South Carolina's Public Facilities, Fiscal Year 1999 is available on the S.C. Energy Office's web site at: <http://www.state.sc.us/energy>. For additional information or printed copies, contact Frank Boyd of the South Carolina Energy Office.

Fiscal Year 1999 Summary Data

Institutions	Total Sq.Ft. (in millions)	Total Energy Cost (in millions)	Avg. \$/Sq.ft.	Avg. kBtu/Sq.ft.
School Districts (86)	91.9	\$75.2	\$0.82	44.99
State Agencies (33)	24.5	\$30.3	\$1.27	106.99
Colleges with Housing (12)	27.6	\$33.9	\$1.22	138.88
Colleges without Housing (21)	6.3	\$7.2	\$1.11	71.30
Totals*	150.4	146.7	\$0.98	74.02

*Figures do not necessarily sum to totals due to independent rounding.

Bubble Carts are Real GEMS on College of Charleston Campus

It's usually star athletes and beautiful people who turn heads on college campuses.

But lately, three bubble-like cars that resemble golf carts cruising around the College of Charleston campus are getting all the double takes.

Purchased last summer by the school's maintenance department, the electric cars – or GEMS (Global Electric MotorCars) – are a hit, says Jim Shumate, who heads the College's Physical Plant.

"We've had nothing but positive comments about them. They're faster, quieter and require less maintenance," Shumate said, adding that eventually he wants to replace his entire fleet of maintenance vehicles with the sporty little cars.

He said that he became interested in the vehicles after reading a newspaper article about how popular they've become in some Lowcountry neighborhoods. "Most people that see them around campus just want to know what they are. It's an attention-getter."

The cars can travel about 27 mph and run about 30 miles on a full charge, which makes them perfect for the college's use, Shumate said, because workers often have to drive on the downtown streets to reach some parts of campus. And a full charge gives plenty of mileage for a day's work. Average golf carts – such as the ones the school has used for nearly 10 years – usually top out at about 17 mph.

GEM is based in North Dakota and retails its cars – which come in several different styles and colors – for about \$8,000.

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Part of the cars' cost can be recouped in the form of a federal tax credit, an incentive that came out of the 1990 Clean Air Act to encourage vehicles that run on alternative fuel sources.

A number of state legislatures already have recognized the GEMS as street legal because they meet federal safety guidelines for low-speed vehicles (a new class of vehicles created last year by the National Traffic Highway Safety Administration) with features such as a heavy-duty windshield, headlights and seat belts.



Ellis Simmons, the college's maintenance department supervisor, said the cars are plugged into a standard wall outlet each night for recharging.

"These things are perfect for downtown. They cut down on gas consumption and pollution," Simmons said. "They're quieter than the old ones so we're not disrupting the classrooms." The vehicles produce no harmful emissions, even when idling, which makes them ideal for the stop and go traffic around the campus. They also cut down on waste heat. Gasoline cars, on the other hand, produce 90 percent of their harmful emissions while idling at stoplights or in traffic, and run much hotter than electric vehicles.

But Simmons said the new cars have created one problem: "Nobody wants to drive the old ones now."

This article by Ron Menchaca was reprinted with permission from the Post and Courier of Charleston.

The Energy Connection

Habitat Homes Test Geothermal Heat Pumps

Two Habitat for Humanity houses in Pickens County, SC have installed geothermal heat pumps as part of a demonstration performed by the S.C. Institute for Energy Studies (SCIES) at Clemson University. These houses are part of a statewide project that includes geothermal heat pumps in Charleston and Beaufort, with funding and support from the S.C. Energy Office under a special project grant from the U.S. Department of Energy.

One of the houses, in Central, S.C., was built by students at Clemson University during the Homecoming celebration last fall. This house began on Bowman Field as one of the 14 "floats". On Monday after the Homecoming game, the house was moved to its permanent site approximately five miles off campus, where students and other Habitat volunteers finished it. The geothermal heat pump ground loops, ductwork and mechanical systems were installed after the house was lowered onto its permanent foundation.

The second geothermal system was installed at another Habitat house in Easley, SC. This house, "The House That Jane Built", was built primarily by women. This house should be finished soon and occupied shortly thereafter.

Both 2-ton geothermal systems include desuperheaters which help produce hot water. The desuperheater in the Central house is connected to an electric water heater, while the system in Easley incorporates a gas water heater. Both systems have also been equipped with separate electric meters. These meters will allow researchers to separate heating and cooling costs from total utility costs.

This environmentally-friendly technology has been around about 30 years and has twice the life of a standard heat pump, said Randy Tilson of Tilson Mechanical in Clemson, who installed the systems. Waterfurnace, Inc., the manufacturer of the systems, provided the systems to Tilson Mechanical at a reduced rate for this project.

This project gives Clemson investigators a total of six geothermal systems to study. Nearly two years ago, two geothermal systems were installed in the Visitor's Center of the SC Botanical Gardens on the Clemson Campus. Two additional systems were installed in the adjacent Bob Campbell Geology Museum. "With the addition of these two small units in small houses, we now can compare costs and paybacks at both ends of the residential spectrum," says Dr. Craig DeWitt, the project's principle investigator at Clemson University. "We know the geothermal systems are more expensive initially, but now we can investigate realistic life-cycle benefits for the different house sizes while we get feedback from the occupants on the other stated benefits of these higher-technology systems." DeWitt hopes these systems will help this technology find greater acceptance among consumers and builders.

For more information on these homes or the SCIES program, contact Dr. Craig DeWitt at (864) 656-2267.

113 Calhoun Street Update

113 Calhoun Street, in historic Charleston, is a three-story 125-year old wood frame house that was damaged by Hurricane Hugo in 1989. The house was donated to the non-profit 113 Calhoun Street Foundation, which is a partnership among Clemson University Extension Service, the Sea Grant Consortium, the City of Charleston, and the Federal Emergency Management Administration (FEMA).

The purpose of the project is to provide an educational facility that incorporates natural hazard mitigation, demonstrates practical sustainable design and building practices that involve recycled building materials, energy and water conservation, sustainable living practices to include recycling, hazardous household waste management, and indoor air and water quality.

According to Dick Dalla Mura, newly named coordinator for the project, the new super-efficient geothermal heating and cooling system is up and running smoothly. The state-of-the-art system was procured through a grant from South Carolina Energy Office to Berkeley Electric Cooperative. Renovations of the building are nearing completion.

In a demonstration of energy efficient lighting, with the assistance of Jim Gasque of Phillips Lighting Company, inefficient incandescent flood lamps are being replaced by super-efficient compact fluorescent lamps, and incandescent flood lamps used in task lighting are being replaced by more efficient halogen lamps. A recent lighting test conducted by Dalla Mura and the South Carolina Energy Office demonstrated that the lumen output of the 23-watt compact fluorescent lamps equaled the quality of the 130-watt flood lamps, using only about 20% of the electricity and greatly reducing the heat load on the air conditioning system.

Slated for an October, 2000 grand opening, 113 Calhoun Street will be open to the public during certain hours and by appointment for groups. For more information, contact Earl Copeland of the Sea Grant Consortium at copeland@musc.edu.

Opportunities To Learn and Get Involved

Energy To Learn (E²L) Forum July 13, 2000 Columbia, SC

The S.C. Energy Office, DHEC, and the Columbia Cluster Postal Service are hosting the third-annual E²L forum for South Carolina educators. Teachers will learn about the many energy and environmental education programs available to them. There is no cost for the forum, however, you must be registered to attend. For more information, contact Renee Daggerhart of the S.C. Energy Office.



Southeast Recycling Investment and Environmental Business Forum September 20, 2000 Charlotte, NC

The Forum offers expanding recycling companies the opportunity to present their business plans to private investors, venture capitalists, bankers, economic developers and recycling officials. For information, contact Ted Campbell at (803) 737-0477.

Noticed the Price of Gasoline Lately?

Undoubtedly, you've taken a hit in the pocket this spring and summer with the rising price of gas. How and why did this happen? Is there anything we as consumers can do about it?



The Energy Information Administration (EIA) of the U. S. Department of Energy has produced the booklet, "A Primer on Gasoline Prices." This brochure answers, in laymen's terms, questions such as "What are the components of the retail price of gasoline? Why do gasoline prices fluctuate? Why do gasoline prices differ according to region?" And "Why are California gasoline prices higher and more variable than others?"

This booklet is available free from the S.C. Energy Office, or by e-mailing EIA at infoctr@eia.doe.gov. You can also find the full text of the brochure on EIA's website at www.eia.doe.gov under "Petroleum," then select "Analysis" on the left sidebar.

SCEO Staffers to Take on New Responsibilities

John Clark, South Carolina Energy Office Assistant Director for Policy and Programs, has been assigned to work for Governor Jim Hodges as Senior Director for External Relations. In this new position, he is responsible as the liaison for state agencies and the general public, as well as nuclear waste issues and energy policy. John is also continuing to work with the S.C. Energy Office on a part-time basis.

Two former interns have been given greater responsibilities in the S.C. Energy Office. Beginning in early July, Meg Brooks will work as a full-time, temporary Public Information Specialist while Public Information Coordinator Renée Daggerhart enjoys maternity leave with her new baby. Meg will oversee day-to-day public information requests, press releases, and two big energy education conferences, Energy ² Learn and NEED.

Carmen Harper worked as an intern under USC's Masters of Public Administration program in the School of Government and International Studies. She is now working with the Funding and Evaluation team as a full-time, temporary Program Assistant. Carmen duties include maintaining the S.C. Energy Office website, offering staff support for ASCEM, conducting background research on new programs and grant opportunities, coordinating the certification of energy savings for public colleges, and assisting with the preparation of federal program plans and reports.

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Editor	Renée Daggerhart

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Recycling Investment Forum Coming Soon

The 5th Annual Southeast Recycling Investment and Environmental Business Forum will be held September 20 in Charlotte, NC. The Forum offers expanding recycling companies the opportunity to present their business plans to private investors, venture capitalists, bankers, economic developers and recycling officials. This year, the Forum has been broadened to include expanding environmental businesses and programs specifically for the investment community.

Southeastern recycling and environmental companies seeking capital should submit their business plans to the South Carolina Recycling Market Development Advisory Council by June 30, 2000. For presenter applications, sponsorship, or registration information, contact Ted Campbell at (803) 737-0477 or visit the RMDAC web site at www.callsouthcarolina.com/recycling.

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